Transportation Planning - The Watershed Connection

Fred G. Bank Office of Environment and Planning Federal Highway Administration, Washington, D.C.

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Summary

Provisions of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) require that transportation planners, highway officials and transit interests recognize environmental values and incorporate environmental protection and enhancement measures into programs to develop and improve the nation's surface transportation system. Certain benefits may be realized if these officials recognize and take advantage of the apparent compatibility of watershed-based environmental management and the national surface transportation planning policies and procedures as established by the ISTEA. This paper provides a national focus for a suggested relationship between transportation and watershed planning. This relationship may be used as a model for stakeholders to protect and enhance critical watershed values, while meeting area-wide needs for a safe and efficient surface transportation system.

Transportation Planning

The ISTEA establishes planning as a pivotal strategy in the cooperative approach for financing needed improvements in the nation's transportation infrastructure. The approach is a federal-aid program wherein state and local governments finance needed transportation improvements with the use federal funds made available from taxes collected primarily through the sale of gasoline. Under this funding arrangement, the State Departments of Transportation (DOT) and the Metropolitan Planning Organizations (MPO), must plan highway and transit improvements through the use of a integrated process that results in long-term programs of projects needed to support the current and future movement of people and goods. These programs address needs over several frames of reference. Although mobility improvements are the focus, the planning process envisioned by ISTEA also includes participation by the public and private sectors in order to support other quality of life objectives. The process incorporates a variety of elements, including environmental protection and enhancement coupled with accessibility to, and equity in, the provision of transportation services. Collectively, these and other elements of the planning process can fit together to help meet a variety of local needs and national priorities.

Planning Factors

An important element of the process is the consideration of various environment and quality of life planning factors. These factors are incorporated into the planning process at an early stage. The relevance of each factor may vary depending upon local and regional circumstances. The

factors include:

- Involvement and participation of the public.
- Overall social, economic and environmental effects of planning decisions.
- Consistency of transportation planning with conservation measures, environmental planning efforts and established goals for resource protection and management.
- Relationship between transportation and short- and long-term land-use planning.
- Inclusion of transportation and environmental enhancement measures.

Public Participation

Public involvement and stakeholder input is essential to adequately consider these factors. The intended outcome of the planning effort is that reasonable and environmentally sensitive decisions are taken which respond to a community's mobility, accessibility, and environmental/quality of life needs. While the needs, values and priorities of communities will vary, the ISTEA transportation planning process encourages several desirable public participation results. First, the participation should produce an informed and involved citizenry which has easy access to the decision process. Second, there should be broad public participation and encouragement of community-based, grass-roots initiative. Finally, the process should proactively involve resource protection agencies and other environmental interests, as necessary.

Major Investment Studies

Along with the public participation, the DOTs and MPOs will conduct what are called *major investment studies* to address significant transportation problems in subunits of the planning area. Major investments are generally large, new project proposals or expansion of existing facilities that involve substantial costs and provide significant transportation benefit. They may include highways, transit facilities or combinations of various modes. The studies examine the existing problem, provide potential solutions, and integrate environmental and socio-economic analyses with the transportation issues. The studies emphasize the direct and indirect costs of the alternatives, mobility and accessibility of the proposed improvements. However in doing so, the studies must include impacts on the social, economic, environmental features of the planning area.

The transportation planning agencies combine the analyses generated through the major investment studies with other sources of information to determine the overall, best way to solve a particular mobility problem affecting the planning area. Information on land-use planning goals, zoning objectives, and resource protection and management priorities must be incorporated. This is necessary to assure that transportation improvement proposals are relevant to public needs and consistent with other planning efforts occurring in the same area. Land-use and environmental information must be similar in scale to that generated in the investment study. Therefore, corridor-scale, regional, and other area-wide information sources are most appropriate.

Watershed Management

Everything happens in a watershed. Regardless of location, any activity occurring on surface of the land will be within the bounds of definable topographic features that determine the drainage of water in the area. Since the natural drainage in these areas can pass through and be affected by the activities occurring on the land, the quality of the water and related environmental features are directly affected by the land-use within a watershed. Thus, all actions taken to select and implement major land-use activities are critical factors which affect programs to manage and protect the natural resources of a watershed.

Without question, transportation development is a major land-use feature in the United States. Highways and other surface modes serve as the fabric which supports the vitality of all other development types, whether residential, commercial, industrial, agricultural, etc. The access and mobility provided by the surface transportation system provides these land uses a vital link to markets and other destinations necessary for their success. Any natural resource management approach that requires existing and projected land-use information as a basis for establishing area-wide goals, therefore must regard transportation development plans as a critical input.

Watershed planning and management programs are no exception. In fact, they are perfectly suited to include and use the transportation development information generated during the major investment study process. Such information, when coupled with the involvement of stakeholders and other activities during the transportation planning process, should be considered a necessary component of the watershed approach to resource management decision making.

Also, the reverse situation should be inherent in the transportation planning process. That is, watershed planning information and related stakeholder involvement activities should be critical elements of the decisions taken to initiate transportation system improvements within the watershed boundaries.

The Common Threads

The argument that the planing processes for transportation development and watershed management should be intermeshed is based largely upon the rather apparent similarities between the two. As depicted in figure 1, there are a number of similar conditions under which the two planning processes operate. Theses similarities offer opportunities for information exchange, stakeholder interaction, and joint decisions which can affect the end-products of each process. If these opportunities for interaction are used, transportation plans should ultimately reflect and be responsive to watershed management goals. Similarly, a watershed plan should accommodate transportation system objectives as a vital component of

Figure 1. Comparison of Transportation and Watershed Planning

Watershed Planning Transportation Planning Watershed-based, develops area-System-oriented, responding to area-wide needs. wide goals and needs. Pubic involvement, that includes the Identification and participation of stakeholders, local partners, and full participation of interested stakeholders and partners. sponsors of watershed-based initiatives. Coordinates and implements various Consistency with concurrent environmental planning efforts. area-wide planning efforts. Maximize effectiveness of Fiscally constrained metropolitan watershed plan by coordinating plans with realistic expectations for programs having limited available implementing actions. resources. Watershed-based environmental and Investment studies require broadly based environmental information to land-use data required to generate goals and plan. determine potential effects of transportation improvements. Strategies for resource protection Possible resource-specific mitigation and conservation incorporated into strategies (e.g. planning-area

Conclusion - Making It Happen

wetland banking program).

The relationship between transportation development and efforts to manage and protect watersheds indicates that highway and transit programs could be integrated with basin-wide

goals and plan.

planning strategies to ensure all individual project recommendations are sensitive to environmental needs. Achieving this possibility will require active communication between all stakeholders and positive actions to lower barriers that can keep programs operating in isolation.

One possible way to take steps toward this goal is to first build upon existing cross-cutting programs. Wetland mitigation is an example. State DOTs routinely spend millions of dollars per year in providing mitigation for wetland impacts resulting from individual project actions. These proposals are individually coordinated and planned involving a variety of state and federal agencies. However, the coordination all too often addresses only the immediate project area and results in mitigation measures that may be ecologically isolated and unrelated to the actual wetland resource needs of the watershed. The result is that limited monetary resources are being spent on measures that may address project impacts, but may not be the best thing that could be done for the watershed. A better way would be to plan and implement mitigation actions that contribute directly to established wetland protection goals of the watershed.

A recent proposal by the Washington State DOT should provide this better way of meeting watershed and wetland resource needs. A pilot program in the Snohomish River basin will redefine the DOT's approach to wetland impacts. The program will develop an integrated, cost-effective wetland mitigation plan to address transportation impacts throughout the Snohomish watershed.

Development of the pilot will require basic information exchange and a commitment to develop a coordinated mitigation approach. The DOT will initiate a forum with watershed stakeholders to provide an assessment of anticipated mitigation actions for short- and long-term project activities. The stakeholders will relate their needs and mitigation priorities for the Snohomish basin wetland resource. The product of these actions will be a watershed-based mitigation plan for transportation projects. Once implemented and evaluated, the DOT will determine if the pilot can serve as a model for a statewide program. The pilot may also be applicable nationwide.

References

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